WHAT IS CLAIMED IS:

1. A focal surface for an opto-electronic imaging system, comprising:

at least one detector formed of at least one solid state element and configured to record an image, the at least one detector being flexible, at least one of the focal surface and the at least one detector having a curvature for recording a curved image plane;

a detector carrier configured to hold the at least one detector; and

a flexible carrier substrate, the at least one solid state element being thinned and connected to the flexible carrier substrate.

2. The focal surface according to claim 1, wherein the at least one detector includes a thinned silicon wafer, the at least one detector being arranged on the focal surface in a curved manner.

3. The focal surface according to claim 1, wherein the at least one detector is formed using an auxiliary carrier connected to the at least one solid state element for thinning the at least one solid state element, the auxiliary carrier being at least one of removable and removed after the at least one solid state element is thinned.

4. The focal surface according to claim 1, wherein the at least one solid state element has a maximum thickness of approximately 20 μm.

5. The focal surface according to claim 1, wherein the at least one solid state element has a maximum thickness of approximately 10 μm.

6. The focal surface according to claim 1, wherein the at least one detector includes at least one of a CMOS line detector, a CCD line detector, a solid state line detector and a two-dimensional array detector.

7. The focal surface according to claim 1, further comprising an actuator configured to vary the curvature.

8. The focal surface according to claim 1, further comprising a temperature control system configured to maintain the at least one detector within a predefined temperature range, the detector carrier at least one of including at least one channel and being coupled to at least one peltier element.

9. A method for manufacturing a focal surface for an opto-electronic imaging system, comprising the steps of:

providing a curved detector carrier with a detector arrangement configured for image recording;

thinning at least one solid state element to form at least one flexible detector;

connecting the at least one solid state element to a flexible carrier substrate; and

one of adapting the flexible detector to a curvature of the detector carrier and making the flexible detector adaptable to the curvature of the detector carrier.

10. The method according to claim 9, further comprising the step of connecting the at least one solid state element to an auxiliary carrier before the thinning step.

11. The method according to claim 10, further comprising the step of removing the auxiliary carrier after the thinning step.

12. The method according to claim 10, further comprising the step of making the auxiliary carrier removable after the thinning step.

13. The method according to claim 9, wherein the thinning step includes at least one of grinding, etching, spin etching and chemical mechanical polishing.

14. The method according to claim 9, further comprising the steps of:

providing the at least one solid state element in the form of a wafer; and

splitting the wafer into chips before the connecting step.

15. The method according to claim 9, further comprising the step of providing the at least one solid state element with electrical contacts by isoplanar contacting.

16. The method according to claim 9, further comprising the step of providing the at least one solid state element with a transparent coating.

17. A method for manufacturing a detector for an opto-electronic imaging system, comprising the steps of:

thinning at least one solid state element; and

bonding the at least one solid state element to a flexible carrier substrate so that the at least one solid state element is at least one of formed flexibly and adaptable to a curvature of a focal surface.

18. The method according to claim 17, further comprising the steps of:

connecting the at least one solid state element to an auxiliary carrier before the thinning step; and

one of removing the auxiliary carrier after the thinning step and making the auxiliary carrier removable after the thinning step.

19. The method according to claim 17, wherein the thinning step includes at least one of grinding, etching, spin etching and chemical mechanical polishing.

20. The method according to claim 17, further comprising the steps of:

providing the at least one solid state element in the form of a wafer; and

splitting the wafer into chips prior to the bonding step.

21. The method according to claim 17, further comprising the step of providing the at least one solid state element with electrical contacts by isoplanar contacting.

22. The method according to claim 17, further comprising the step of providing the at least one solid state element with a transparent coating.

23. A detector for image recording, comprising:

a thinned solid state element; and

a flexible carrier substrate, the solid state element being connected to the flexible carrier substrate;

wherein the detector is flexible.

24. The detector according to claim 23, wherein the solid state element has at least one of a thickness of approximately 10 μm to 20 μm and a length-to-width ratio of approximately 20 to 60.

25. The detector according to claim 24, wherein the length-to-width ratio is approximately 40.

26. A detector formed according to a method comprising the steps of:

thinning at least one solid state element; and

bonding the at least one solid state element to a flexible carrier substrate so that the at least one solid state element is at least one of formed flexibly and adaptable to a curvature of a focal surface.

27. The detector according to claim 26, wherein the method further comprises the steps of:

connecting the at least one solid state element to an auxiliary carrier before the thinning step; and

one of removing the auxiliary carrier after the thinning step and making the auxiliary carrier removable after the thinning step.

28. The detector according to claim 26, wherein the thinning step includes at least one of grinding, etching, spin etching and chemical mechanical polishing.

29. The detector according to claim 26, wherein the method further comprises the steps of:

providing the at least one solid state element in the form of a wafer; and

splitting the wafer into chips prior to the bonding step.

30. The detector according to claim 26, wherein the method further comprises the step of providing the at least one solid state element with electrical contacts by isoplanar contacting.

31. The detector according to claim 26, wherein the method further comprises the step of providing the at least one solid state element with a transparent coating.

32. An opto-electronic imaging system, comprising a focal surface, the focal surface including:

at least one detector formed of at least one solid state element and configured to record an image, the at least one detector being flexible, at least one of the focal surface and the at least one detector having a curvature for recording a curved image plane;

a detector carrier configured to hold the at least one detector; and

a flexible carrier substrate, the at least one solid state element being thinned and connected to the flexible carrier substrate.

33. The opto-electronic imaging system according to claim 32, wherein the at least one detector includes a thinned silicon wafer, the at least one detector being arranged on the focal surface in a curved manner.

34. The opto-electronic imaging system according to claim 32, wherein the at least one detector is formed using an auxiliary carrier connected to the at least one solid state element for thinning the at least one solid state element, the auxiliary carrier being at least one of removable and removed after the at least one solid state element is thinned.

35. The opto-electronic imaging system according to claim 32, wherein the at least one solid state element has a maximum thickness of approximately 20 μm.

36. The opto-electronic imaging system according to claim 32, wherein the at least one solid state element has a maximum thickness of approximately 10 μm.

37. The opto-electronic imaging system according to claim 32, wherein the at least one detector includes at least one of a CMOS line detector, a CCD line detector, a solid state line detector and a two-dimensional array detector.

38. The opto-electronic imaging system according to claim 32, further comprising an actuator configured to vary the curvature.

39. The opto-electronic imaging system according to claim 32, further comprising a temperature control system configured to maintain the at least one detector within a predefined temperature range, the detector carrier at least one of including at least one channel and being coupled to at least one peltier element.

40. An opto-electronic imaging system, comprising a detector, the detector including:

a thinned solid state element; and

a flexible carrier substrate, the solid state element being connected to the flexible carrier substrate;

wherein the detector is flexible.

41. The opto-electronic imaging system according to claim 40, wherein the solid state element has at least one of a thickness of approximately 10 μm to 20 μm and a length-to-width ratio of approximately 20 to 60.

42. The opto-electronic imaging system according to claim 41, wherein the length-to-width ratio is approximately 40.

43. An opto-electronic imaging system, comprising:

at least one of a focal surface and a detector;

the focal surface including:

at least one detector formed of at least one solid state element and configured to record an image, the at least one detector being flexible, at least one of the focal surface and the at least one detector having a curvature for recording a curved image plane;

a detector carrier configured to hold the at least one detector; and

a flexible carrier substrate, the at least one solid state element being thinned and connected to the flexible carrier substrate;

the detector including:

a thinned solid state element; and

a flexible carrier substrate, the solid state element being connected to the flexible carrier substrate;

wherein the detector is flexible.